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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,985

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Shinya Kondoh

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP  
901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

PAK, SUNG H

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

11/12/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/591,985		KONDOH ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	SUNG H. PAK		2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/7/09</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/15/2009 has been entered.

### ***Response to Amendment***

Applicants' response filed 6/15/2009 has been considered, but it is not convincing. The examiner respectfully submits that Fig. 4 of Okumura (US Patent No. 6,008,871) discloses the electrode circuit being open (i.e. no voltage) and the liquid crystal being in an ON state and an OFF state. Therefore, Okumura fully discloses "liquid crystal layer maintain[ing] first and second stable states in the absence of an applied voltage, and one of said first and second stable states is set as said second mode" in the manner recited in the present application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-2, 4-5, 8-11, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,008,871 to Okumura (hereinafter "Okumura").

Okumura discloses a liquid crystal apparatus comprising: a first substrate 404 (Fig. 4): a second substrate 403; a reflective polarizer 405, mounted on the first substrate 404 and having a first transmission axis and a first reflection axis at right angles to each other, for transmitting linearly polarized light vibrating in a plane parallel to the first transmission axis and for reflecting linearly polarized light vibrating in a plane parallel to the first reflection axis; a polarizer 401, mounted on the second substrate 403 and having a second transmission axis, for transmitting linearly polarized light vibrating in a plane parallel to the second transmission axis; a liquid crystal layer 408/409 provided between the first and second substrates, and having a first mode which causes the direction of polarization of incident light to change by utilizing birefringence (as shown in liquid crystal 409 of Fig. 4) and a second mode which does not utilize birefringence and therefore does not cause the direction of polarization of incident light to change (as shown in liquid crystal 408 of Fig. 4), wherein a display state is switched between a bright display state and a dark display state by applying a voltage to the liquid crystal layer 408/409, and the bright display state is produced by driving the liquid crystal layer in the second mode (Fig. 4);

wherein the bright display state is produced by causing ambient light 411 entering the liquid crystal layer through the second transmission axis of the polarizer 401 to be reflected at the reflective polarizer 405 and by allowing the reflected light to return through the liquid crystal layer 408 and emerge from the polarizer 401;

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wherein the liquid crystal layer 408 maintains one of the first and second stable states in the absence of an applied voltage, and one of the first and second stable states is set as the second mode (without using birefringence mode);

wherein in the second stable state, liquid crystal molecules 408 are aligned in a direction substantially parallel to the second transmission axis (Fig. 4);

further comprising an illuminating apparatus 406 mounted outside the reflective polarizer 405, and the liquid crystal layer 408 is driven in the second mode with the illuminating apparatus 406 turned off;

comprising an illuminating apparatus 406 mounted outside the reflective polarizer 405, and the liquid crystal layer 408 is driven in the second mode with the illuminating apparatus 406 turned on;

wherein the bright display state is produced by allowing light 413 emitted from the illuminating apparatus 406 and entering the liquid crystal layer 408 through the first transmission axis of the reflective polarizer 405 to pass through the second transmission axis of polarizer 401 and emerge on a viewer side;

wherein the first transmission axis and the second transmission axis are arranged at parallel to each other (Fig. 4);

wherein the illuminating apparatus 406 is provided with a reflective layer 405 for reflecting a portion of light.

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 6-7, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,008,871 to Okumura.

Okumura discloses a liquid crystal display device as discussed above.

Regarding claim 3, Okumura does not explicitly disclose the first transmission axis and second transmission axis arranged at right angles to each other. However, arranging transmission axes of various optical layers (such as, arranging at right angles to each other) to achieve optimal light output is well known in the art. Such arrangement is considered advantageous and desirable because it allows for optimum display brightness and increases display efficiency. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Okumura to have first and second transmission axis arranged at right angles to each other as claimed.

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Regarding claims 6-7, Okumura does not explicitly disclose the use of liquid crystal molecules in a state that is 45 degrees slanted as claimed. On the other hand, the use of liquid crystal molecules with 45 degrees slant is well known and common in the liquid crystal display art. 45 degree orientation is well known to be advantageous and desirable in the liquid crystal art because it allow for multi-domain liquid crystal configuration, and yields liquid crystal displays with wider viewing angles. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Okumura to have liquid crystal molecules oriented at 45 degree angles.

Regarding claims 12-13, Okumura does not explicitly disclose the light absorbing layer disposed between the reflective polarizer and illuminating apparatus as claimed in the present application. On the other hand, the use of absorbing layers in liquid crystal display for conditioning the output light of the illuminating light source is well known and common in the art. Such light absorbers are commonly used in the art to effectively control the output light characteristics of a light source without changing the light source itself. Therefore, it would have been obvious to a person of ordinary skill in the art to modify the device of Okumura to have light absorbing layer as claimed in the present application.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUNG H. PAK whose telephone number is (571)272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571)272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sung H. Pak/  
Primary Examiner, Art Unit 2874